Art & Theatre

Pollution Prevention Management in the Arts

Summary: Art may evoke the mysteries of the world, but there is no mystery about the potential health, safety and environmental hazards associated with certain artistic activities. The Environmental, Health and Safety Department at Rhode Island School of Design has successfully developed programs, policies and procedures to demonstrate that creative processes and environmental stewardship are not mutually exclusive.

Campus Profile

Rhode Island School of Design (RISD)
Providence, RI
UG Students: 1,882
Grad Students: 322
Resident Students: ~ 700
Full and Part-time Faculty & Staff: 885
Cont. Ed Faculty: 285
Cont. Ed Enrollment: 5,000
GSF of all buildings: 1.2MM
Annual Budget: $79.5 Million

Green Activities

RISD has set the goal of becoming a world-class leader of EHS issues in the arts. The college hired an Environmental, Health and Safety Officer in 1999, who reports to the Associate Provost of Academic Affairs. Since 2001, the EHS Department has been actively developing an Environmental Management System (EMS), based on the ISO 14001 framework.

Project Goals

- Ensure safe working conditions for faculty, staff and students
- Comply with applicable standards
- "Reduce, Reuse, Recycle" – lower consumption, reduce energy use and minimize waste
- Enhance understanding by faculty, staff and students of the environmental, health and safety impacts of their activities.

RISD has designed the ***ARTS*** model to achieve these goals. ***ARTS*** forms the core of RISD's Environmental Management System, and encompasses the following:

Active commitment to compliance and continuous improvement;
Reduction of pollution through waste minimization, lowered materials consumption, and energy conservation;
Training and educating faculty, students, and staff about the environmental considerations of their activities;
Stewardship in enhancing the quality of life for our employees, faculty, students, and neighboring community.

Description

Compliance – Environmental agency inspectors have reported compliance issues in art classrooms, student art studios, photography darkrooms, and areas where printmaking, ceramics, metalsmithing and fabrication take place.
Conformance -- Faculty and students perceived procedures and regulations to be at odds with the creative process.
Management – Art faculty were often on campus for only a few hours per week. The college could not fully control the purchase and use of hazardous materials by students on campus.

Pre-Project Considerations

- Are the art activities and their hazards known?
- Are environmental, health and safety champions identified?
- Are clear, concise procedures or guidelines in place?
- Are expectations for "compliance" with regulations and "conformance" with institutional standards clearly understood?
- Are faculty, staff and students held accountable (e.g., inspections, monitoring)?

Steps Taken

1. A comprehensive environmental analysis was performed for each activity on campus, including an identification of the location, the process "owner," and associated environmental aspects and impacts. Selected art materials and waste streams were further subjected to analytical testing to determine whether they were flammable, corrosive, ignitable, reactive or toxic, and/or whether they needed to be managed as a hazardous waste.

2. Procedures were developed to provide clear instruction and guidance to students.
   - Departments were encouraged to develop procedures specific to their activities and hazards. For instance, residential students must sign the "Dormitory Workroom Agreement," stating they will abide by explicit safety practices when working in a common room.
   - Information boards were used to communicate key environmental, health and safety information in classrooms and studios.
   - EHS articles were published in various college newsletters.
   - A program of inspections and "tickets" (called "compliance instructions") were instituted to instruct faculty, staff and students in following procedures in studio workspaces.

3. An environmental mission statement was developed and an Environmental Management System designed.
   - The EHS Department surveyed incoming freshmen to assess their understanding of EHS issues, including the hazards associated with different materials.

4. Pollution prevention and conservation programs were identified based on identified opportunities, monitoring, inspection efforts, and surveys.

Written Procedures

- Acrylic Wastewater Disposal
- Brush Washing
- HMIS Labeling
- Watco/Linseed Oil Waste Disposal
- Solvent Disposal
- Wipe Handling
- Universal Waste Procedures

Participants

A successful program requires the commitment of administration, faculty, students and staff. The key people in planning or implementing an EHS program for the arts at RISD are:

- Administration, for direction and resources
- Technicians, for activity-specific instruction and guidance
- The EHS Office, for support and services

While faculty champions can be found in some departments, they are often the weakest link because their time on campus is typically more limited than students and staff.

Performance and Benefits

Project Examples

In addition to such pollution prevention initiatives as recovering spent fixer from photography darkrooms and campus recycling programs, the following initiatives were undertaken.

Brush Washing Stations: RISD has placed solvent brush washing stations in Painting and Illustration areas where students routinely clean brushes. Each station has a reservoir of 4-5 gallons of solvent (Isopar L – high flash, low vapor pressure solvent) in which the hose is activated by a switch on the side of the station/sink. The stations are serviced every 6-8 weeks. Approximately two 55-gallon drums of sludge are shipped off site each year. **BENEFITS**: This program has minimized student handling and management of solvents, and has reduced the volume of solvent waste by 75%. The return on investment was less than 2 years.

Good Data Project: Suspect waste streams were tested to determine whether they must be managed as a characteristic hazardous waste. Based on this testing, certain activities were modified or materials/practices prohibited (see below). Additionally, EHS worked collaboratively with departments and vendors to develop a comprehensive on-line library of Material Safety Data Sheets (MSDS) specific to the hazardous materials used at an art college. (See the Resources section.) **BENEFITS**: Accurate information regarding chemicals and hazards was made readily available.

Prohibitions: The Painting Department limited the use of certain hazardous materials. Only Gamsol and Isopar L (low-odor alternatives to turpentine) were officially sanctioned for use by the department. Certain paints containing elevated levels of toxic metals, such as cadmium and chromium, were prohibited. A "Permissible Materials List" was developed using product MSDS, technical data sheets, correspondence with vendors, and toxicity testing data was performed by EPA-approved laboratories for the EHS Department. In product design classes, certain two-part rubber mold making activities were prohibited because the obsolete mold would have required management as a hazardous waste due to the high levels of mercury in the product. "Prohibited Discharge" signage was posted at all sink areas. **BENEFITS**: These standards and prohibitions reduced the cost of managing spent materials as hazardous waste.

Paint Management: Bins were located across campus for the collection of aerosol cans. Three small (4 x 4) spray booths were set up in dormitory common workrooms and collection bins were made available for aerosol cans. The Facilities Department evaluates these aerosols for reuse; if reuse is not possible, then the can contents are fully evacuated using a device that punctures them and reclaims any excess material for proper disposal. The container is recycled as scrap metal. Excess and unused materials, such as paint or solvents, are brought to a centralized location where they are further evaluated for their potential for reuse. Facilities or students may claim these materials. If they are not reused within a reasonable period of time, the materials are properly disposed. **BENEFITS**: This program minimized the cost of managing abandoned materials as hazardous waste.

Lessons Learned

1. Use creative communication (e.g., posters, video, web) techniques to get your point across.
2. Focus on good housekeeping.
3. Enlist a program "champion" within the department, either faculty or technician. If you cannot find a champion, EH&S must fill that role;
4. Meet regularly with senior administration to obtain necessary resources and keep program improvements moving forward.
5. Survey students to keep the issues "alive" and to identify areas for further training and information.

Further Information and Resources

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RISD EHS web page at
http://intranet.risd.edu/departments/default.asp?department=Environmental_Health_and_Safety

Environmental Virtual Campus at www.c2e2.org

Center for Research on Occupational and Environmental Toxicology: Artist Safety and Health Resources:
http://www.ohsu.edu/croet/occ/artist.html

City of Tucson: Health and Safety in the Arts at http://www.ci.tucson.az.us/arthazards/home.html

Health Hazards in the Arts: Information for Artists, Craftspeople and Photographers at
http://wally.rit.edu/pubs/guides/healthhaz.html

Other Art Programs and Resources

Princeton University Theatre Safety Operations Manual at
http://www.princeton.edu/~ehs/theatre/Title.html

Goshen College www.gosehn.edu/art/DeptPgs/safety.htm